Dairy General Order Annual Report Software
Response to Comments
Central Valley Regional Water Quality Control Board
30 July 2010

Several comments were received from interested parties related to the beta test of the Dairy General Order Annual Report software that has been developed by Merced County Department of Public Health, Division of Environmental Health as part of a contract with the State Water Resources Control Board. Written comments were received by the following parties:

- Deanne Meyer, Ph.D., University of California, Davis
- Bridget Whitney, The Source Group, Inc.
- Paul Sousa, Western United Dairymen
- Michael Mitchell, EAC Engineering

Since many comments received were similar, they have been combined and summarized to represent a single comment with a single response. Should questions arise regarding this document, please contact Jennifer LaBay at (916) 464-4735 or at JLaBay@waterboards.ca.gov.

Comment: The statement in the software release notes that the new Annual Nutrient Application, Tracking and Reporting tool is required to be used is incorrect. The previously approved spreadsheet is acceptable and can still be used by consultants or individuals if they so choose.

> **Response:** The Dairy General Order Monitoring and Reporting Program (MRP) Annual Reporting Section states that the annual report shall be completed on an annual report form provided by the Executive Officer. The new Merced County software is replacing the previously approved Annual Report spreadsheet with a web-based program that addresses all of the information specified in the Annual Reporting General Section of the MRP found on page MRP-12. However, due to the lateness of the release of this new program, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) is allowing the previously approved Annual Report spreadsheet to be submitted for the 1 July 2010 Annual Reporting due date. After 1 July 2010 the new Annual Report will be the required format for future Annual Report submittals unless an alternative form has been approved by the Executive Officer. The previously approved Annual Report spreadsheet has not, and will not be updated to reflect the new reporting period. Any changes necessary to the spreadsheet will need to be completed by the user. Therefore, the Central Valley Water Board highly recommends using the new software if at all possible.

Comment: The new software is extremely time intensive compared with the previous Annual Report form.

>**Response:** The first annual report will probably be time intensive to complete; however, subsequent reports will not take as much time because the report can be completed throughout the year instead of in one sitting.

Comment: The program should have an auto populate function from the Nutrient Management Plan (NMP), Waste Management Plan (WMP), Preliminary/Annual Dairy Facility Assessment (PDFA or ADFA), or from the Annual Report. The auto populate function should include basic information, including owner and operator information, field name, parcel numbers, acres, etc.

>**Response:** Merced County will be evaluating the ability to auto populate the software for owner and operator information, field names, parcel numbers, and acres from the NMP or from previously filled out Annual Reports.

Comment: The nutrient application budget should be the actual budget that was created by the dairy's agronomist.

>**Response:** The nutrient application budget that was completed by a certified agronomist for the NMP is only a plan of how the dairy will ultimately reach the 1.4 crop uptake ratio for nitrogen. The nutrient application budget that is provided in the Annual Report software is an evaluation of the actual amount of nutrients that were applied to the crops over the reporting period compared to the actual amount of nutrients removed by the crops. This nutrient application budget can then be compared to the nutrient application budget plan present in the NMP.

Comment: The reporting period should be set for the user every year.

>**Response:** The new Annual Report software has been developed for use by both dairies covered under the Dairy General Order and by dairies covered under Individual Waste Discharge Requirements (WDRs). The reporting period for the Dairy General Order is different than the reporting period for dairies with Individual WDRs. In addition, the software has been developed to allow for variability. It will allow a dairy to have a shorter reporting period for certain cases.

Comment: The Secondary Unit category under Owners and Operators mailing address should be removed.

> **Response:** The secondary unit on the "Owners and Operators" information page is a description required for specific mailing address scenarios. Examples include Apartment (#), Suite (#) and office number.

Comment: The maximum number of animals during the reporting period should not be the standard used. Instead the calculation should be based on the average number of animals during the reporting period. The use of maximum will over estimate excretion making it difficult to compare excretion to application and removal.

> **Response:** The maximum number of animals is required to be reported because the Central Valley Water Board must be able to compare the maximum number of mature cows at the facility with the permitted number of mature cows for the facility. The Dairy General Order is set up to evaluate the maximum number of cows housed at each facility. It is understood that the manure generated calculations associated with these numbers will be over-estimated.

Comment: The program provides an error message if a user does enter a value for roof or open confinement in the herd information section. Forcing a user to enter zero is a wasted keystroke.

> **Response:** In this scenario, the program displays a validation message indicating the field is "blank" and requires a numerical value entry. Where no animals are maintained in either roof or open confinement the user must enter a "0" ensuring the users acknowledgement and recorded response, this field cannot be left "blank".
>
> Throughout the program the person doing the data entry is frequently required to enter some information in a field as opposed to simply leaving the field blank. While we understand that this requires an extra keystroke, it also helps ensure that the person doing the data entry has actually thought about the question that the program is asking. Although this makes data entry more time intensive, we feel that it will produce a better quality report that is more representative of dairy conditions and will reduce the number of errors caused by over looking information.

Comment: The cells calculating salt [Salt (lbs/day)*] indicate the ASAE is the source of the calculation. This is incorrect. There is no salt determination in the ASAE table.

> **Response:** In response to the comment received, the reference has been modified and now indicates the source of the salt computation as "** *Salt*

estimate for milk and dry cows from UCCE report, June 2005."
(University of California Committee of Experts (UCCE) report entitled
<u>Managing Dairy Manure in the Central Valley of California</u>, University of
California, Division of Agriculture and Natural Resources, Committee of
Experts on Dairy Manure Management, June 2005 revision, page 10).

Comment: There is a problem with the potassium calculation. When zero is
entered for dry cow numbers, a value is returned for K excretion. Modification of
the dry cow number does not change the amount of K estimated for excretion.

> **Response:** The computation had previously utilized only the number of
> milk cows entered. This was an error, and is now corrected.

Comment: The program does not accept arrow input and only moves via tab
from left to right. To move downward or to other cells is cumbersome and
requires excessive hand movement (both use of mouse and then fingers for data
input).

> **Response:** "Arrow" key use in this software and most contemporary web
> browsers is reserved for specific functions. Examples; Arrow up and
> arrow down key use provides for vertical scrolling (pull downs, etc…), left
> arrow and right arrow key use provides for horizontal scrolling within a cell
> (scroll left or right, beginning, midpoint or end of text, etc). The "Tab" and
> "Shift" "Tab" keys are reserved for movement to and from cells and links
> (tab indexed). Mouse use is restricted to button activation, deactivation
> and mouse over/hover tool tip display. "Enter" key is used to submit
> entries (save).

Comment: The Manure Excreted information was calculated on the herd
information page. The estimated data is already displayed in a table. There is
no need to require user input of the data already calculated. Manure excreted
and salt are not carrying over.

> **Response:** The Herd Estimates page estimates excretions utilizing
> standard referenced computational methods displaying the values in
> tabular form. The Manure Excreted page re-displays the standardized
> computational values from the Herd Estimates page and allows the user to
> either accept the standardized estimates or manually enter (override) user
> generated excretion values. This allows those with more detailed
> excretion information to use their data, providing flexibility.

Comment: The discharge categories identified in the software do not match up
with the four identified types of discharges:

1. Unauthorized discharges (including off-property discharges) or manure or
   process wastewater from the production area or land application area.

2. Storm water discharges to surface water from the production area.
3. Storm water discharges to surface water from each land application area.
4. Tailwater discharges to surface water from land application areas.

> **Response:** Actually there are only three types of discharges discussed in the software. These are based on the requirements of the Annual Report in the Monitoring and Reporting Program on page MRP-12 et. seq. numbers 9, 10, and 11. Storm water discharges to surface water from land application areas are reported separately.

Comment: In the Discharge Summary pages the time of discharge does not allow an A.M. or P.M. entry. The program should identify if the entry is in military time or not.

> **Response:** In response to the comment received, the cell now allows several versions of AM and PM time entry.

Comment: In the Discharge Summary pages the "Source of Discharge" does not allow any input. If you do not fill in the box, the program gives the user an error message that the "discharge source is required for this discharge."

> **Response:** Changes to the program have been made in response to the comment received. For "Discharges from Land Application Areas to Surface Water" a pull down selection now allows for user selection of "Wastewater", "Blended Wastewater", "Tailwater" or "Other" selection, with a manual descriptive entry of "Other" by the user.

Comment: If there were no changes to the NMP then it is not necessary to ask if the NMP was completed or approved by a certified NMP specialist.

> **Response:** The approach in the program is based on the fact that page MRP-13 number 12 of the Monitoring and Reporting Program asks both if the NMP has been updated and if the NMP was developed or approved by a CNMP. We will take the comment under advisement as we evaluate possible changes to the MRP.

Comment: The term Certified Nutrient Management Planner in the NMP update statement is not correct. Instead it should be Certified Nutrient Management Specialist.

> **Response:** The term Certified Nutrient Management Planner is directly from the language on page MRP-13 item number 12 under Annual Report, General Section. To be more consistent with the Dairy General Order, the term "Specialist" has also been added to this item in response to the comment received.

Comment: The crop yield input should not go into decimals. In addition, the link to the Central Valley Water Board website needs to clearly identify page 6. This link is to a PDFA and it is not an appropriate citation fro the crop data.

> **Response:** Consistent with the updated crop reference utility by Stu Petty Grove and Ian Bay at UC Davis, the updated crop reference document and software user entries allow a decimal value one digit to the right (tenths). The PDFA page 6 reference is now displayed as a footnote on the linked Nutrient Content Tables: Book Values to Estimate Crop Harvest Removal Nutrient Content Information Chart.

Comment: Laboratory analysis is the only option a user can pick when entering in data. The box called Other/Estimated should be deleted.

> **Response:** The Dairy General Order MRP requires certain constituents to be monitored in the field. Although the Central Valley Water Board is allowing these constituents to also be analyzed by a lab, a place must be made available within the software for a user to enter non-lab analyzed data, for example, data collected in the field. In addition, if the MRP was not followed by an individual and book values are being entered, the option for Other/Estimated will notify staff of the Central Valley Water Board that the data is not lab generated. To make the selection between the two options less confusing to the user, a more detailed description will be provided in the directions for these pages.

Comment: Data should only be reported on a dry basis not as-is.

> **Response:** MRP Table 2 of the General Order allows both percent wet weight, or as-is, and dry weight to be reported.

Comment: Detection limits are very consistent; therefore, there should be default settings with an over-ride option.

> **Response:** According to comments received by Merced County on the software, detection limits can be quite variable. For example, a discharge sample may need to be diluted which would change the detection limit.

Comment: The Monitoring and Reporting Program (MRP) does not support a salt percent number. There should be an n/a option for this entry.

> **Response:** Although the MRP is silent on a method or requirement for a salt percent number, the Annual Reporting requirements identified on page MRP-12 mandates that a total salt number be reported in items 4, 5 and 6.

Comment: The number of digits carried in the readout for the nutrient content once entered is beyond reasonable. Data are entered at percent. Three significant digits is more than sufficient.

>**Response:** Values recorded as percent values three digits to the right of the decimal would limit the user's entry to values equal to or greater than 10 ppm (10 ppm is equivalent to 0.001 %). Six digits to the right of the decimal is required to convert and enter parts per million at the 0.01 ppm equivalent level into a cell expressed in units as percent composition (0.01 ppm is equivalent to 0.000001 %).

Comment: General mineral concentrations are not required and should be removed.

>**Response:** Although not necessarily required for everyone, the MRP Table 2 does require general minerals to be sampled once within 12 months and annually for two years after groundwater monitoring wells are required.

Comment: For Process Wastewater, the program needs to clearly identify units for EC and prod people to check their units. These values were submitted incorrectly last year.

>**Response:** The software has always listed µmhos/cm as the units for Electrical Conductivity (EC) data entries.

Comment: Atmospheric deposition is 14 pounds of nitrogen per year. It appears that the program is applying 14 pounds of nitrogen per year to each crop.

>**Response:** The program has been changed so that atmospheric nitrogen is now partitioned to each crop and field correctly (one crop/field - all 14 lbs of atmospheric nitrogen are applied to that single crop on that field for the reporting period, 2 crops/field - 7 lbs of atmospheric nitrogen are applied to each crop for the reporting period, etc…).

Comment: Manure analysis needs to identify how to determine salt. Since there is no method yet, there should be an n/a option.

>**Response:** Since the Annual Report section of the Dairy General Order requires total salt content to be reported, this item cannot be considered "not applicable;" however, if no data is available the program will prompt the user to enter a zero.

Comment: Media identification should not be required when the sample description is included in the source definition. Also, the term media may confuse many. Using "Type of Material" may serve as a better descriptor.

> **Response:** The software requires information to be entered in a certain order. If the information is not provided in that order, the program cannot retrieve it later when the user needs to review it and/or manipulate it. In this situation, media identification is required so the program can recognize it for later use. The software is unable to distinguish between the title and the description when pulling information up later; therefore, both are necessary. In response to the comment received, the software now uses the term "Material Type" as a descriptor.

Comment: Irrigation District water should be a separate source for Irrigation Water. Alternatively, the program should define surface water to include irrigation district water.

> **Response:** The software provides two source types including groundwater or surface water. The "Description of irrigation water source" cell allows the user the flexibility to further define/describe the irrigation sources.

Comment: For soil analysis, the program should differentiate between what is required to be collected and entered and what analyses are optional.

> **Response:** The General Order indicates what is required to be collected and entered verses what is optional. To put this information into the program, it would need to be added to the "red line" directions on the page. Staff felt this would make the directions too lengthy and confusing, but we will consider the request to add this information.

Comment: Plant tissue analysis in the MRP requires it to be reported on a dry basis. This should be reflected in the program.

> **Response:** The MRP does require plant tissue to be reported on a dry weight basis; however, since total nitrogen, phosphorus, and potassium can be expressed as percent wet weight, the moisture content must be provided to calculate dry weight unless the lab already reported on a dry weight basis.

Comment: The user should not have to enter in any additional information for manure export. Attachment D of the Dairy General Order, Manure Tracking Manifests, should be adequate as an attachment.

> **Response:** MRP-12 item number 6 requires a calculation of the nitrogen, phosphorus, potassium and total salt content of the total manure and

process wastewater that was exported from the facility. If this information was not entered into the program, these calculations could not be determined.

Comment: On the "Add Harvest Event" page the term 'manure density' is used in place of 'crop density.'

>**Response:** In response to the comment received, the "Harvest Events" page term has been corrected to read as "Crop Density".

Comment: The printed Annual Report should be optimized for black and white printing.

>**Response:** Due to cost and time restrictions, the new software could not be optimized for black and white printing using textures for the graphs; however, the program does use labels to identify the graphics even when printed in black and white.

Comment: The Annual Dairy Facility Assessment (ADFA) should only be required if changes have been made since the last submitted report.

Response: Page MRP-12 item 2 of the Dairy General Order requires the following:
>"An Annual Dairy Facility Assessment (an update to the Preliminary Dairy Facility Assessment in Attachment A) using the tool provided by the Executive Officer or any future revisions thereto."

Therefore, an ADFA is required to be submitted every year with the Annual Report.

Comment: Discharge maps are only required for land discharges if they are not in line with the NMP. This should be clarified in the required attachments section.

>**Response:** We will consider the comment and see if we can add some language to the description of the required attachments.

Comment: In the required attachments "storm water monitoring" the words "more frequently than required in the General Order" should be removed.

>**Response:** This language is a direct quote from the Storm Water Reporting Section on page MRP-14. Item 1 under Storm Water Reporting Section, General Reporting Requirements states that "the results of any monitoring conducted *more frequently than required* at the locations specified herein shall be reported to the Central Valley Water Board."

Comment: When creating a new report, the 'reporting period' should be the first page to reduce confusion.

> **Response:** Since many annual reports are done by consultants who may have numerous dairy clients, the "Facility Information" page is presented to clearly identify the facility the user is working on. The next page the user will see is the "Reporting Period" page. Once information is saved on the "Reporting Period" page, the reporting period will show up on each subsequent page.

Comment: When adding application events, Media Type should be first to pull up the auto-fill option and event source should then auto-fill.

> **Response:** The software requires information to be entered in a certain order. If the information is not provided in that order, the program cannot retrieve it later when the user needs to review it and/or manipulate it. In this situation, the program requires the field and planting information to be entered first so it can present the information correctly.

Comment: The program should allow the user to tab between entries as was possible with the NMP and WMP. Having to use the mouse to make selections is very time consuming.

> **Response:** Tab indexing is provided. The "Tab" and "Shift" "Tab" keys can be used to move to and from cells and links. Mouse use is restricted to button activation and deactivation, and to hover over icons to get tips for completing the report.

Comment: The program should include a Winter Forage Mix or Winter Forage as a crop selection. It is time consuming to have to click "other" and enter "winter forage."

> **Response:** Although we considered including "mixes," nutrient content information charts provided by Stu Pettygrove and Ian Bay at UC Davis, with the exception of Sorghum-Sudangrass forage, only list single crop types. Therefore, only single crop types are listed and included in pull down menus. Users can develop a copy and paste list/document to assist in expediting tasks common to their operations, potentially saving key strokes.

Comment: The program should calculate pounds per ton removed from the crop data entered.

> **Response:** The Dairy General Order requires information related to the amount of nutrients applied compared to the amount of nutrients taken up by a crop on a pounds removed per acre basis.   A calculation for pounds

per ton removed does not provide the information required by the General Order.

Comment: It is unclear if the crop data is entered on a dry weight basis or as-is basis.

> **Response:** The software allows the user to enter data on either a dry weight basis or an as-is basis. In both the Manure Analysis page and the Plant Tissue page, the program asks for the Method of Reporting. The user can choose either "concentrations are reported on a dry-weight basis" or "concentrations are reported on an as-is basis" depending on how the lab reported results.

Comment: A definition for total salt should be provided.

> **Response:** The Dairy General Order Attachment E, page 4 provides the following definition for Salt in item number 39:
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> "Salt is defined as the products, other than water, of the reaction on an acid with a base. Salts commonly break up into cations (sodium, calcium, etc.) and anions (chloride, sulfate, etc.) when dissolved in water. Total dissolved solids is generally measured as an indication of the amount of salts in a water or wastewater."

Comment: The Irrigation Water input screen has a mistake. The page says "Process Wastewater Analyses" at the bottom of the screen, which is in the wrong section.

> **Response:**   In response to the comment received, the page has been corrected.

Comment: Allow a selection of the owner information in a drop down box for the manifest entry.

> **Response:** Due to the variability at different facilities, this information may be too difficult to provide in a drop down box. For example, owners may change halfway through the reporting period. Merced County is evaluating if this is something that can be done for future Annual Reports.

Comment: The program should allow the conversion from dry weight to as-is basis.

> **Response:** The software does allow this conversion by using the conversion utility function. It allows the user to convert dry matter to or from as-is basis if the user knows the sample moisture content and the

nutrient content on a dry basis. This result can then be entered into the program.

Comment: The program should allow a user to choose a manure sample to use in an application event, similar to the way the program allows a user to choose a wastewater sample for a lagoon event.

> **Response:** The program does allow the user to choose a manure sample assuming that the user has selected the appropriate media type and data has been entered in to support the selected media type.

Comment: The program should allow fresh water irrigation events without other nutrient sources.

> **Response:** The program does allow fresh water irrigation events without other nutrient sources. It also can blend multiple irrigation sources as an event.

Comment: The server capacity should be expanded because the program seemed to run slowly.

> **Response:** We have reviewed the software and determined that any issues reported that were related to the program running slow are not a result of limitations with the program server.

Comment: The information required to be submitted for manure exports will be very difficult to provide. A mailing address, contact name and phone number for the recipient of the export may not be available. Being able to provide the location of where the manure is going has been sufficient in the past.

> **Response:** The Central Valley Water Board understands that the information required in the manure manifests may not always be available. The Dairy General Order requires that hauler information be reported for all exports; therefore, it must be included as an entry as part of the Annual Report program.

Comment: The program should allow irrigation events to be copied.

> **Response:** The intent of the new Annual Report program is for a dairy to utilize the software throughout the year. After an irrigation event occurs, it can then be entered into the program. In addition, copying an irrigation event is not feasible since irrigation events tend to have too much variability, including weather, amount of water applied, dates of application, etc.